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Scenario brainstorming_Dec 2011.docx
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Private Firms Having to Meet Base Numeric Standards—Assumptions and Scenario Brainstorm

Assumptions (key to our argument):

Base nutrient criteria in Montana are 0.3-1.1 mg/l TN and 0.025-0.14 mg/l TP. Montana's general variance is 10 mg/l TN and 1 mg/l TP for discharges greater than 1MGD, and 15 mg/l TN and 2 mg/l TP for discharges less than 1 MGD.

No one can currently treat to 0.3 mg/L TN with current technology—the best that can be done consistently is about 3-4 mg/l at a few wastewater plants across the nation. Larger businesses can probably get to 0.025 mg/L TP in some cases, but possibly not consistently.

Montana's cold climate limits the effectiveness of nutrient treatment technologies such as BNR.

This means that if base criteria have to be met today, businesses either have to find an alternative for discharging into state waters (due to TN) or they would have to treat to limits of technology (LOT).

In Montana, it has been decided that LOT is 4 mg/l TN and 0.7 mg/l TP.

Per the WERF Interim study that estimates costs for various nutrient treatment levels, the general variance of 10 TN and 1 TP is about WERF level 2. Montana LOT of 4 TN and 0.7 TP is about WERF level 4. The base criteria is stricter than WERF level 5.

Montana's manufacturing sector is suffering more than other Montana sectors from the Recession (we have supporting info from various sources such as U of M BBER, and MT Dept of Labor). Some of these sub-sectors don't expect to recover to pre-Recession levels in terms of employment until 2020. Note that businesses affected by nutrient criteria in Montana are only a portion of the total manufacturing sector.

Cost estimates of treatment to LOT. We can do this with WERF study cost estimates and business effluent flows, although for small businesses with low flow, we need better numbers.

Include case studies of one refinery, a mine, a sugar beet plant, and something else. We may have to use representative numbers from the industry as a whole. Stillwater Mining is on board, so far.

No assumptions yet on metrics to use for determining a 'substantial impact' on businesses. Suggestions include Profits test, jobs lost, profit margin effects, investment effects, ability to pass on costs, etc. What do we use and why? How do we perform calculations from representative (versus actual) data?

Widespread impacts—can use EPA guidance and common sense such as effects of a refinery or Stillwater Mine closing.

Economic effect Scenarios

Best Case:

Recession mostly ends in 2012.

Most small businesses would have to close, because they would not be able to afford LOT. A few may get lucky and have a cheap alternative to discharging into state waters or have lots of dilution (lucky enough to be near larger river/stream).

Most medium businesses stay open. Medium businesses would have to either find an alternative to discharging into state water (land app) or go to LOT (4 TN, 0.07 TP). This may hurt some of these medium sized businesses in terms of lower profit or causing new investment to not happen.

Large companies can do this without a bad impact---they can afford LOT or land app or some other process modification.

Worst Case:

Recession carries on through 2012-13

All small and medium businesses have to close or greatly curtail operations. One refinery (or more?) has to close down leading to gasoline and diesel shortages in Montana , Spokane and parts of North Dakota. One or more large metal mine has to close down leading to job losses and so on.

Answer is probably somewhere in middle—perhaps closer to Best case. Worries that large business would not experience significant impacts.